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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/875,888	06/08/2001	Takashi Yamamoto	1095.1187	9572

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EXAMINER

PAPPAS, PETER

ART UNIT PAPER NUMBER

2628

DATE MAILED: 04/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/875,888

Applicant(s)

YAMAMOTO, TAKASHI

Examiner

Peter-Anthony Pappas

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 14 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3 and 5-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3 and 5-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 June 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2/14/06.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/14/06 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 3, 5-9 and 11-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ota et al. (U.S. Patent No. 5, 003, 498), in view of Watanabe et al. (U.S. Patent No. 5, 701, 403).

4. In regards to claim 1 Ota et al. teaches a graphics display method and apparatus, wherein graphics processing or geometric modeling functions is/are effected efficiently producing an object having a 3D shape, and a graphic display apparatus having geometric modeling functions, which perform the steps of dividing a 3D shape into a number of 3D geometric entities (primitive solids) defining a given object's 3D

shape as a synthesis of memorized geometric entities (column 2, lines 44-66; column 3, lines 48-53; column 6, lines 30-37; Figs. 1, 2A, 7A-D, 8A-D).

Said graphics display and display method comprise the steps of determining 2D drawings, which are taken in a number of directions (perspectives), of one object to be displayed via a display means 12 (column 3, lines 28-33; column 5, lines 64-68). The geometry entities consist of a top view, a front view, a side view and a perspective view (column 3, lines 40-43; Fig. 23). It is noted said views are considered a plurality of orthographic projection views.

Ota et al. illustrates in Figs. 6A, 6B and 6C the set operation and the synthesis describing mode 20 is a mode of determining union among the geometric entities 14. The synthesis describing modes 21 and 22 are the modes of determining subtraction and intersection, respectively, among the geometric entities 14. Figs. 2A and 2B illustrate two examples described by using the arrangement mode 23 in synthesis modes. Figs. 7A, 7B, 7C and 7D illustrate four concrete examples of the set operation, in which Fig. 7A shows the positional relationship between the geometric entities A and B. Fig. 7B shows the results of the union ($A+B$) of the geometric entities A and B, Fig. 7C the results of the subtraction ($A-B$) of geometric entities A and B, and Fig. 7D the results of the intersection ($A \cdot B$) of the geometric entities A and B (column 6, lines 30-37; column 7, lines 49-68; column 8, lines 1-2). It is noted said union, subtraction and intersection of said respective geometric entities are considered Boolean operations.

Ota et al. fails to explicitly teach maintaining a projection view database associating graphic elements contained in said generated plurality of orthographic

projection views with corresponding 3D geometric features. Watanabe et al. teaches a CAD system adapted to consider a mutual relationship (association) between figure elements of a 2D drawing and the shape of a 3D product model together with drawing regulations (column 4, lines 13-21). Said system includes a drawing regulation database 4 for storing data showing a correspondence between drawing regulations and drawing in the CAD system, a product model database 7 for storing data which represents the shape of a product model created by the product modeling building section 3 and a drawing database 9 for storing 2D drawing data produced by the drawing data production section 8 (column 13, lines 23-59; column 15, lines 8-16).

It would have been obvious to one skilled in the art, at the time of the applicant's invention, to incorporate the database storage means taught by Watanabe et al. into the system taught by Ota et al., because while Ota et al. teaches transferring entity information (column 15, lines 3-25), which would require the maintaining of said entity information, Ota et al. does not elaborate on how said entity information is maintained or stored for retrieval after transfer and as such incorporating a database for the storage of said entity information would alleviate this issue as well as provide a means for later search and retrieval of said information, providing a centralized storage location for accessing stored entity information.

Ota et al. teaches that the designer 1 designates an entity which he desires to move with the stylus pen 6 (graphic element selection means), via the four divisional picture frames 30-33 on each of which the movement of said entity can be ascertained (column 15, lines 3-25; Fig. 23). It is noted the movement of said entity via picture

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frames 30-32 is considered to result in the movement of said entity in picture frame 33, wherein said entity displayed in picture frame 33 (3D feature selection means) is considered a 3D geometric feature. Furthermore, by designating said entity in one of said four divisional picture frames it is noted said entity is considered to be set to a selected state in which said designer can further manipulate said entity.

5. In regards to claim 3 Ota et al. teaches that a given object having a 3D shape is produced by the set operation (functions for determining a union, a subtraction and an intersection) of the geometry entities (column 6, lines 30-37). In order to change the 3D shape, the related entity information alone may be transferred, so that the changing and inputting of a shape can be done efficiently (column 14, lines 21-27). It is noted said top, front, side and perspective views are considered indicative of a given line of sight, respectively.

6. In regards to claim 5 Ota et al. teaches if the stylus pen 6 is moved in, for example, the divisional picture frame 30 that a reference point of the cylinder is altered so that the point to which the stylus pen 6 has been moved and the origin of the geometry entity coordinate system 18 of the cylinder agree with each other, and the drawing data on this condition are prepared, the resultant data being re-indicated on the graphic display 12 (column 15, lines 10-22). Ota et al. fails to explicitly teach having the identified geometric feature appear with emphasis, in contrast to other features shown in a 3D view on the monitor screen.

Official Notice is taken that both the concept and the advantages of giving emphasis, be it either visually or audibly, to a given selected object in contrast to any

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objects surrounding said object are well known and expected in the art. Thus, it would have been obvious to one skilled in the art, at the time of the applicant's invention, to incorporate said selection emphasis into the system as taught by Ota et al., because by identifying a given user selected object with emphasis, from other surrounding and possibly like objects, it would allow a given user to focus in on said object without being distracted by said surrounding objects and thus result in said selected object being more clearly identifiable.

7. In regards to claim 6 the rationale disclosed in the rejection of claim 1 is incorporated herein. Ota et al. teaches a system for performing interactions between a designer 1 and a graphic display control apparatus 2 or a host computer 3 (application system). When the command 4 is required to be processed by the host computer 3 it is transferred thereto via an interface means 9. The host computer 3 has an application program 10 loaded thereon (column 5, lines 44-58). It is inherent that an application program, which is loaded on a given host computer, is stored on a computer-readable medium.

8. In regards to claim 7 it is noted said top, front, side and perspective views are considered hierarchically structured as said top, front and side views are elements which comprise a root perspective (3D) view. Ota et al. teaches a method for superimposing (overlying) an entity on another (column 16, lines 48-53).

9. In regards to claim 8 the rationale disclosed in the rejection of claim 6 is incorporated herein (Watanabe et al.: column 4, lines 13-21; column 13, lines 23-59; column 15, lines 8-16).

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10. In regards to claim 9 Ota et al. fails to explicitly teach wherein the 3D feature selection means searches the database for the one of the 3D geometric feature corresponding to the selection graphic element. Watanabe et al. teaches that input information interpreting section 2 enables the drawing processing section 61. Said drawing processing section 61 searches for the 2D drawing which corresponds to the updated product model data in the 2D-3D link data base 5 and retrieves the 2D drawing data from the drawing data base 9. The drawing processing section 61 modifies the remaining views, which the user has not changed, included in the retrieved drawing data (column 19, lines 29-36).

It would have been obvious to one skilled in the art, at the time of the applicant's invention, to incorporate the searching of a database for 2D drawing information as taught by Watanabe et al. into the system as taught by Ota et al., because by utilizing a central storage location for stored entity/drawing information, as shown above, it would provide a means by which said information could now be retrieved and thus would allow for a system incorporating such a storage and retrieval means to more easily access information multiple times without requiring for said information to be recreated. In addition by utilizing a well known data storage format such as a database said information could be more easily transferred amongst computer systems allowing for said information to be more easily updated with new information or swapped out for new information, for example.

11. In regards to claim 11 the rationale disclosed in the rejection of claim 1 is incorporated herein. It is noted said top, front, side and perspective views are defined by the system.

12. In regards to claim 12 the rationale disclosed in the rejection of claim 1 is incorporated herein (Ota et al.: column 6, lines 30-37; column 7, lines 49-68; column 8, lines 1-2).

13. In regards to claim 13 the rationale disclosed in the rejection of claims 1, 5 and 8 are incorporated herein. It is noted said apparatus is considered to perform the method.

14. In regards to claim 14 it is noted said system is considered to perform the extracting creating, entering, displaying of the orthographic projection view data, identifying and displaying the 3D view in sequence. Furthermore it is noted that "sequence" does not imply any particular order and thus said claim language is interpreted accordingly.

15. In regards to claim 15 see Figs. 9a and 23.

16. In regards to claim 16 the rationale disclosed in the rejection of claim 1 is incorporated herein. Ota et al. teaches a graphic display control apparatus 2 and host computer 3 (2D drawing generating unit and 3D feature selection unit), graphic display means 12 (display) and (graphic element selection unit) stylus pen 6, command 4 and designer 1 (column 5, lines 46-52; Fig. 1).

17. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ota et al. (U.S. Patent No. 5, 003, 498) and Watanabe et al. (U.S. Patent No. 5, 701, 403), as

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applied to claims 1, 3, 5-9 and 11-16, in view of Foley et al. (Computer Graphics: Principles and Practice).

18. In regards to claim 10 Ota et al. and Watanabe et al. fail to explicitly teach where 3D geometric features other than the identified one of the 3D geometric features are masked. Foley et al. teaches that a primitive can be clipped (masked) prior to scan conversion to a clip rectangle, wherein pixels belonging to said primitive that are outside the clip region are not displayed.

It would have been obvious to one skilled in the art, at the time of the applicant's invention, to incorporate clipping into the system as taught by Ota et al., because as Foley et al. al teaches the advantage of clipping before scan conversion is that the scan covert must deal with only the clipped version of the primitive, not with the original (possibly much larger) one. In addition by isolating said primitive to the point where everything else is not scan converted it allows for a large quantity of emphasis on be placed on said primitive.

Response to Arguments

19. In response to Applicant's remarks that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., applying Boolean addition, subtraction and multiplication operations; that a 3D geometric feature is not merely a line segment or point) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

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20. In response to Applicant's remarks against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Applicant states that a 3D geometric feature is not merely a line segment or point, but a solid object formed from a plurality of geometric elements. Ota et al. teaches performing the steps of dividing a 3D shape into a number of 3D geometric entities defining a given object's 3D shape as a synthesis of memorized geometric entities (column 2, lines 44-66; column 3, lines 48-53; column 6, lines 30-37; Figs. 2A, 7A-D, 8A-D).

21. Applicant's remarks have been fully considered but are not deemed persuasive.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter-Anthony Pappas whose telephone number is 571-272-7646. The examiner can normally be reached on M-F 9:00am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ulka Chauhan can be reached on 571-272-7782. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Peter-Anthony Pappas
Examiner
Art Unit 2628

PAP


ULKA CHAUHAN
SUPERVISORY PATENT EXAMINER